

(61)



houses did likewise and the procession collected more girls as it passed 796
 each house on its way towards the zayats. Behind the girls, the young
 lads of the village followed with empty tins and buckets, to go and draw
 water with which to bathe the images of the Buddha, and then the bath-
 water for the old folk in the zayat. The procession always looked very
 gay, for the girls wore stout bright cotton prints instead of the usual
 white muslin jackets, so that the wet clinging clothes after a splashing
 would not make immodest figures of them. As this procession passed,
 not even the naughtiest urchin would dare to splash them as long as they
 headed in the direction of the monastery. Arrived at their destination,
 the young people served the meal to the elders, drew the water and
 washed the images, filled the jars with bathwater for their grandmothers,
 ate their own meal from the pooled remains of what they had brought,
 and then started uproarious fun. The young men had the advantage
 of their buckets, but the girls had the advantage of being able to use
 guile by affecting fear and helplessness until they could turn the buckets
 round on their pursuers. After this they went in search of the ngu
 branches, the equivalent, in Ye, of the *padauk* flowers which boys and
 girls in other parts of Burma were plucking.

The *padauk* is the *pterocarpus indica*, a tall tree growing in the mixed 796
 dry forests of Burma and giving a rich red wood which is much used in 137
 the making of bullock carts. It is also a beautiful flowering tree, whose 132
 bright yellow blossoms are always associated with the freshness of the 821
 New Year festivities, for it flowers at this time and its branches are cut
 down and dragged into houses with drops of water lighting up the golden

796 yellow flowers against the rich dark green leaves, either water from the
137 water throwers or the *tha-gyan mo*, the thingyan showers. Light showers
132 usually fall about this time although the monsoon is far off yet; they come
821 from a small low pressure area over the land although when we were
young it seemed to be part of what the true *tha-gyan sa* leaflets should
promise, a foretaste of the coolness of the real monsoon, and a recognition
of *Tha-gya Min's* presence. If the rain was late in falling, the
villagers set to work to hurry it on. The rain spirits live in the stars
but they sometimes come out to play with each other in the space of the
firmament. Then rain falls on the earth. But at other times, when the
sun is not in the right quarter, they stay indoors and the earth receives
only the scorching heat of the sun. Men can then rouse the rain spirits
to show more energy and come out, by the beating of tin cans and by
exerting energy themselves in a tug-of-war. In *Ye*, the upper street
and the lower street used to put up teams for this and tugging was
carried on amidst betting and cheering and the beating of empty
kerosene tins by women and children around.

796 The girls and youths from the monastery returned at about noon,
262 wet and happy and dragging the branches of *ngu* along. Throughout the
day the children ran into the street to pour water on passers-by; bullock
carts went by, decorated with *ngu* branches and holding music and
water parties of young men and girls, the young men richly painted and
dancing in the open carts; rival teams drew up and staged water-fights
in the street or went to besiege houses where beautiful girls with a reputa-
tion for coldness or coyness were hiding. Throughout the day, also,
dishes of sweetmeats arrived, for each house does the good act of making
a comestible in large quantities for distribution. Ours was made on the
second day and was a Moulmein speciality for which my mother had the
best talent. This *tha-gyan hta-min*, thingyan rice, sounds insipid when
described as boiled rice, eaten floating in cold water which has been made
fragrant, to the accompaniment of green mango salad and saltfish
shredded and fried crisp. To us, of course, it is delicious. The water
has received an infusion of the aroma from an earthen pot which is
turned upside down over the burning of tallow and fragrant woods. The
rice is not the moist steamy rice of meal times but has been drained after
cooking, on tray-sieves of cane, and the grains lie clear and separate and
whole. The delight of eating thingyan rice in the hot weather is in-
describable to foreigners, perhaps even to all non-Moulmein people,
eating it in wide china bowls, with china spoons, alternating the concen-
tration of sour and salt tastes of mango and saltfish with the coolness and
cleanness of the rice and its water. We could eat this throughout the
day; being thingyan rice it carried a blessedness which made us immune

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previous child, the ta-yok chi-thay-ma had frantically grabbed a piece
of charcoal and had smudged the arm of the dying child, saying: "If I
get this child back in my next labour, may I know her by this mark."
Down below the arum bushes grew close and dark against the fence.
They had frightened us, like green snakes that must not be touched,
because the leaves made your tongue itch with an intangible and incur-
able itch although the roots were made into delicious soups. In Grand-
father's bedroom was a window looking into the maternity chamber,
still padlocked with a lock whose key had been lost nearly twenty years
ago, and a patch of light wood nailed over the hole which a robber had
made with the point of his damyaung. From the maternity chamber,
also, an aunt had thrown a basin of washing water to splash on an uncle
sitting below, with whom she had quarrelled and whose hpon would be
lowered by the ignobility of the woman's labour. For my mother the
house must have had sharp memories, but she never spoke of them
while there because my father became ill shortly after. This oppressed
her spirits, and made her think only with sorrow of her dead mother and
father, her brothers and sisters, so many now dead and the rest scattered
far and never returning after the death of Grandfather.

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231 Silk-raising¹ is therefore encouraged as a means of stopping the ruination of the timber. It is a very simple matter, involving the least possible amount of toil, and at the same time being on the whole very profitable. Moreover, the
● [137] Burmese mulberry-bush, which is quite distinct from the ordinary *Morus Indica*, does not grow well on the alluvial soil of the low lands, while it flourishes on the hillsides, where the Yabeins mostly live. The silk obtained from the caterpillars fed on the leaves of the hill-shrubs is very much better than that obtained from the mulberry-bushes of the plains. Thus it happens that all parties are likely to be pleased. The English Government foresters will gradually find means of putting an end to the timber-burning, which they detest; the richer Burmans down in the lowlands will neither have the temptation to increase their income at the expense of their piety, nor will they have that piety shocked by an organised system of taking life; while the Yabeins in their own hill-villages will be allowed to do as they please, and will accumulate tidy sums of money into the bargain.

231 It is certain that neither the silkworm nor the mulberry-
171 bush is indigenous in Burma. It is said that the first cocoons were brought from China in the reign of King Anawrata Saw. Others again maintain that the Chinese taught the Shans, the Shans the Karens, and these the Burmese. In some places among the more superstitious hill-tribes the mulberry-tree receives a kind of worship. In any case it is more probable that both the silkworm and the tree were introduced from Western China, down the valley of the Irrawaddy or the Salween, than that they came over the hills, through turbulent mountaineers, from India. The
231 shrub does not grow much more than ten feet high, and
289 seldom produces good succulent leaves for a longer period than three years. After that the plants are apt to get coarse and stringy, and the cultivators ordinarily abandon the plantation, or root out the bushes and plant new ones. As the shrub will not flower it is propagated by cuttings, and new shoots are constantly being planted so that there may be an unfailing supply of young and fresh leaves. The Burmans call it the posabin, "the tree the silkworms eat." There is another tree—that from the bark of which the coarse paper

[See as an alternative to brand-tillage—ANALYST]

CHAPTER XXVII

LACQUER WARE

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FOR a long time it was assumed that Japanese and Chinese lacquered goods were simply papier-mâché. A popular fancy for the ware has brought to the knowledge of all who care for the information that it is really wood of different kinds painted over with the juice of the urushi tree. Should fashion ever inspire a similar enthusiasm for Burmese productions of the same kind, it is probable that it may be supposed that these also are composed of solid wood, and people will wonder at the extreme thinness and flexibility of the finer specimens. But it is only the coarsest ware which is thus produced. All the better boxes and cups are made of a woven basket-work of strips of bamboo; the varnish used on them is, like the Japanese lacquer, the sap obtained from the stem of a tree, and has nothing whatever to do with the insect-produced lac, such as English varnishers employ in solution with alcohol. I am no botanist enough to know whether the urushi (*Rhus vernicifera*), the Japanese tree, is identical with the Burman thi'si (*Melanorrhæa usitatissima*), or even whether it is of the same genus or order. Thi'si (literally wood-oil) is dark in colour from the moment it is gathered, whereas the urushi sap is described as being light yellow when first extracted, and only turning black after considerable exposure to the air. The urushi has been cultivated by royal order for hundreds of years in Japan; but in Burma, though the Forest Department declares the thi'si a reserved tree, there is no attempt at organised cultivation, and the thi'si-bin grows wild in the jungle. Not even near Nyaung-u, where nearly

every household in the town is occupied in the trade, is there any attempt at regular planting of nurseries. Nevertheless it is plentiful enough, and affords a magnificent spectacle when it is in flower—a huge forest tree covered so thickly with creamy-white blossoms that the leaves cannot be seen. The flowers have a fragrant scent not unlike that of apples, and the needy and practical Burman often makes a very acceptable curry of the buds. In full-grown trees the average height to the first branch is thirty feet, and the ordinary girth six feet from the ground is nine feet. Charcoal-burners have a predilection for the wood, which would not meet with approval in Japan; and it is much used for anchors and tool-helves, being very close and fine-grained. It is too heavy to float when green, but dried it is not particularly weighty. The sap may be collected at all times, except when the fruit is on the trees, from Pyatho to Tabaung—the first three months of the English year. Then it is thin and does not produce such a brilliant polish. The mode of collection is simple enough. Incisions are made in the stem, and the sap trickles into bamboos placed to catch it. When it is to be kept any time there must be a depth of two or three inches of water on the top, otherwise it would dry up and become solid. The water, however, does not improve it. The best varnish, called thi'si ayaungtin, is that which has been just drawn from the tree; the second quality contains twenty-five per cent of water, the inferior as much as fifty.

The articles lacquered are chiefly drinking-cups and betel-boxes, the latter consisting of a cylindrical inner case, in which are fitted two or three trays for holding the lime, betel-vine leaves, cutch, nuts, and other ingredients for betel-chewing, the whole covered by an outer lid reaching to the bottom of the inner case. Ordinary kôn-it, betel-boxes, are three or four inches high and two and a half to three in diameter. Articles of the same shape are made of all sizes up to a couple of feet or more in height, these last being used for holding clothes and women's working materials. The bi-it, ladies' toilet-boxes, are often the most delicate and carefully worked. The actresses always carry splendid specimens about with them to contain their combs, oil, scent,

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AGRICULTURE

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104. OUTLOOK OVER MIXED FORMS OF CULTIVATION.

the vagaries of the rivers. A good season is one in which a large proportion of the fields have water enough for an early start and in which the rainfall is steady, not leaving the surface to dry up by a long break in the rain nor deluging the soil at other times. All the alluvial land of favourable elevation and quality is laid out in level rice-fields. Where the rainfall is ample—fifty inches and upwards—portions of the diluvial land with tenacious soil can be utilised in the same way by merely saving the surface-water. In regions of lighter rainfall, in a few favoured localities, such land is brought under rice by help of irrigation and if need be by terracing as well. The rice-fields are bordered by low turfy balks (*kasin*) about a cubit high, to keep in the water. These regular rice-lands form less than one-tenth of the gross area of the country. The rest is mainly irreclaimable, chiefly mountain, waste. The waste areas of the alluvial plains (*kwin*) are flooded from three to ten feet deep in the rains. They are clothed with elephant-grass (*kaing*) studded, through with silk-cotton trees and a few other species. The lowest levels in the *kwin* form shallow lagoons (*in*, No. 103) which dry up in the hot season. Dry-season crops—sugar-cane (which is also grown on the wet system), maize, lentils, and vegetables for a limited market—are obtained in the *kaing*.

Burma has become the rice-mart of the world. Since the development of this trade the price of the staple export has more than quadrupled, producing in the lower country a prosperity which has no parallel in respect of its equal diffusion. It is believed that this development of the wealth of Pegu has been favoured by the upheaval

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the vagaries of the rivers. A good season is one in which a large proportion of the fields have water enough for an early start and in which the rainfall is steady, not leaving the surface to dry up by a long break in the rain nor deluging the soil at other times. All the alluvial land of favourable elevation and quality is laid out in level rice-fields. Where the rainfall is ample—fifty inches and up-



105. HILL-PEOPLE MAKING THEIR CULTIVATION CLEARING (p. 149).

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TIMBER

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242. DEFILE BELOW THE GREAT RAPID
OF THE SALWEEN.

alone as being actuated by greed (*lawba*, p. 44), but because primitive Buddhism eschews every thing mystical and occult. The operations are carried on at night for secrecy. Reputed adepts are found among the class of recluses called *yathé*, who from their life in the wilds are supposed to penetrate the arcana of nature.

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Wood-work was greatly restricted until better tools were imported. Planks and scantlings used to be laboriously prepared for boat-building and for palaces, religious edifices, and the houses of the great. Excepting the inner gates of the masonry temples, wood-work over a century old is scarce. But before the Burmans possessed the means of turning their timber to account for themselves, the country had become noted for its stock of teak. Burma possesses many valuable woods, but the pre-eminence of teak is such that for general purposes *timber* had come to mean always *teak* timber. Teak possesses the advantages

which it is hammered is obtained from bamboo-fibre.

In Burma the idea still prevails that gold may be compounded from baser metals or the quantity of fine gold augmented by their means. Alchemists are found in every town, who experiment in the hope of success or practise on dupes who furnish the gold that is to be increased. A furnace and blast is the chief appliance of the laboratory, and the potent agent relied upon is mercury. Ingredients of every sort, animal, vegetable and mineral, are experimented with, under the influence of charms and cabalistic forms, whence the name for alchemy, *ekkaya-tô*. The business is under the ban of religion, not alone

243. TEAK-TREE OUT OF LEAF
(MARCH).

BURMA

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244. MIXED HILL-CROP OF RICE, SESAMUM, AND TEAK, IN SEPTEMBER (p. 140).

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pits for squaring the logs. The steel pit-saws found their way into trade and gave an impetus to wood architecture, of which the ecclesiastical buildings of Burma are the chief examples. Timber-traders started building teak ships in Burma, employing Chinese carpenters. This business has been abandoned, but lighters are still built.

The teak-tree (*Tectona grandis*) occurs in patches of the dry mixed forest, the forest namely of which the principal element is a deciduous bamboo, with timber trees of fifty or more deciduous species scattered through it. Of these species about half a dozen produce serviceable timber. The bamboo-stools send up their culms to heights of forty and sixty feet in the course of a few weeks, before their branchlets and leaves appear. By means of this the bamboo has the advantage over all other vegetation. The seedlings of trees have to struggle up under its cover. At intervals of twenty to thirty years the bamboo species flower, to grow again from seed. Then is

of being nearly all heart-wood, having considerable strength, with moderate hardness and weight, working easily with axe, saw and chisel, taking nails, and above all, not rusting nails or iron in contact with it. It has a serviceable brown colour and an odour by which it may always be distinguished, due to the presence of an oil which repels the attacks of insects, notably of the termites, and which protects it from decay. Teak is in short the prince of eastern woods. At the end of the eighteenth century, teak was already being worked out of the Burma forests and brought to port, where the foreign

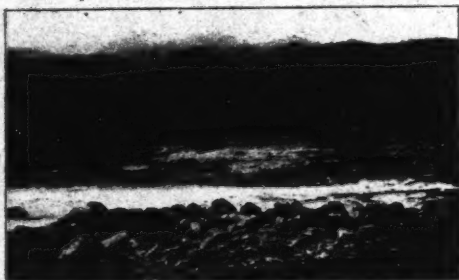
shippers had established saw-



245. FLUE OF FACTORY DISRUPTED TEN YEARS.

TYPES OF FOREST

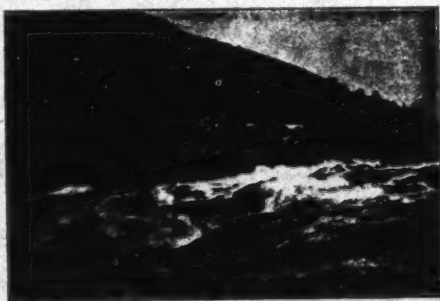
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247. THE GREAT RAPID OF THE SALWEEN (HATJ).

(No. 355) provide rich fuel to the forest fires which burn every season and kill the struggling seedlings of trees. The bark of teak has about an eighth of an inch of a loose corky layer which protects the quick against scorching. The bare soil is exposed to severe erosion by rain. It is only where contributions of a better kind than its own are made to the soil that teak flourishes. Its occurrence is limited to patches of the dry forest zone, in which drainage and other factors not yet understood concur in a favourable way. Teak plantations are easy to start and the young trees are very promising. But they begin to languish and to seed prematurely when planted pure, as they mostly are. Teak attains its full height early, before commencing to flower, which it does in its axes of growth. Where the bloom drops off, no further straight length is grown. The stock of teak is in the main mature and over-mature. It is the savings which the mixed forest has accumulated of this imperishable wood, and is not supported by relays of younger generations in due proportion. Much even of the apparently rising stock is exhausted in vigour and is stationary; a tree crippled in vigour may never attain a girth of five feet. The blanks made by working out the teak are naturally filled up by the more numerous competing species. Teak seedlings in open situations grow twenty to thirty feet

the chance for the timber-trees. A seeding teak-tree may originate a clump of young teak on the natural clearing, just as happens on cultivation clearings (*taungya*, p. 149). Sometimes a mixture of trees in its turn suppresses the young bamboo. So far from forming vegetable mould on the surface, the great crisp leaves of teak



248. VORTEX OF THE GREAT RAPID.

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BURMA

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049. DEFILE BELOW THE LAST RAPID OF THE SALWEEN.

mon on good sites. The boles of the full-grown trees range from twenty-five to seventy-five feet and are mostly straight and round.

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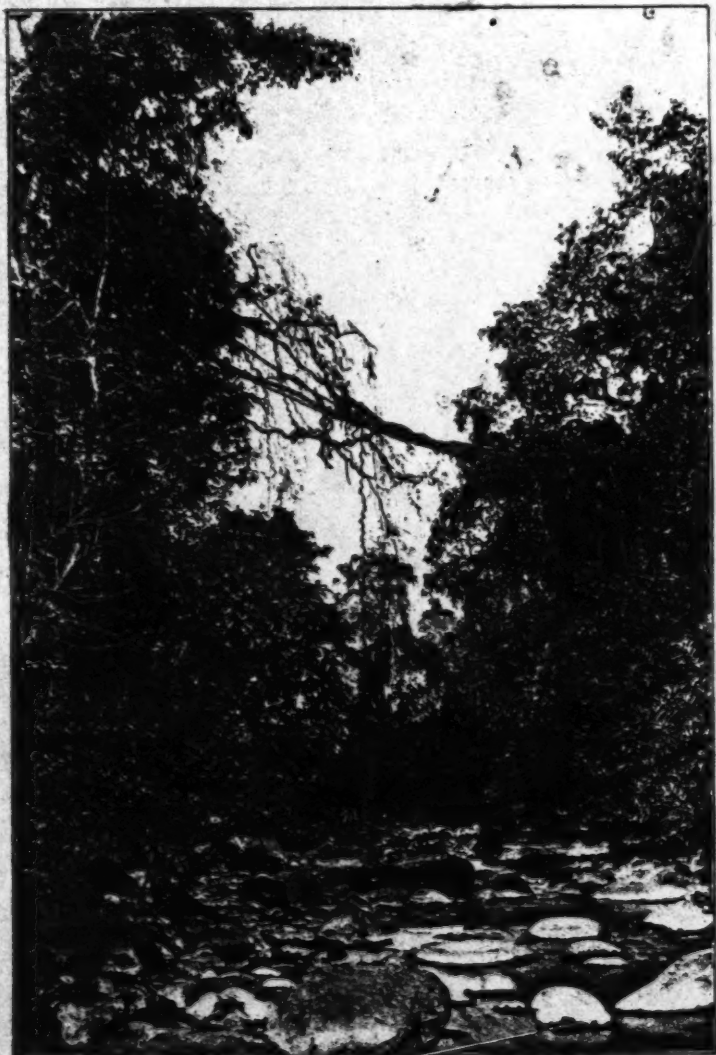
The character of the dry mixed forest is determined by the prevailing bamboo, one of seven or eight species. The mixed forest constitutes a vegetal zone skirting the *kwin*, chiefly on sandstone slopes and hills, up to one thousand feet elevation. The timber tree most abundantly interspersed in the bamboo is *pyinkadd*, an "iron-wood" suitable for house-posts, sleepers, and rough work. The most valuable timber tree after teak, but even more sparingly distributed, is *padduk*, an excellent wood for carriage-building; it has a rich red colour. In the driest type of mixed forest the catch-tree is common (*shd*). The sandstone soil is interrupted by great stretches of "laterite," noted for its barrenness. It is not devoid of vegetation, but the forest which occupies these areas is open and stunted, with frequent blanks. It is called *indaing* from the prevailing *in*, the only gregarious forest tree of Burma, excepting the trees of the littoral and the pine of the high altitudes. This forest contains several congeners of the *sal* of India. Below the forests of the sandstone and laterite comes the *kwin*, with its prevailing *kning*, interspersed with *leppan* and *pauk* trees. In the water-logged spots, and on the fringes of permanent lagoons, is the

high in a few seasons and get clear of the forest fires. But those struggling under cover are cut back by fire every year. Trees may attain a height of sixty feet in twenty years. A vigorous tree attains a marketable size of seven to eight feet girth at breast height in sixty to eighty years; trees of ten to twelve feet girth are com-



250. MANGROVE JUNGLE.

[OPP. P. 114]



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251. EVERGREEN FOREST BROOK.

[To face p. 114.]

TYPES OF FOREST

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252. RIPARIAN FOREST.

thikkt, ka-nyin (wood-oil). These trees and their associates follow the banks of the small feeders into the hill-regions, or form an inter-mixture in the forest of evergreen trees which occupies the soles of ravines, abounding in lianas and epiphytic plants, with an undergrowth of *musaceae*. Above this forest or, in other cases, the *twia*, comes the zone of dry forest already described.

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Above the dry forest zone, but also at lower levels where the soil is volcanic, comes the hill evergreen forest (No. 256). Here trees are in the ascendant, except for occasional patches of giant bamboo (Nos. 122, 362). The trees are of innumerable species, of spongy and worthless timber, with a sprinkling of *ka-nyin*, *kaung-hmh*, *taung-pin-hmh*, and *thingda*, and in the extreme South, *gungau*. The undergrowth consists of young trees, with palms, pandanus and

paludal forest (*yaguing tau*) and marshland (*bwet*). Towards the sea, the river-sides of the *twia* are bordered with *kaung* and *pinle-kanach*, the evergreen monotony of which is only broken by the *dant* (*Nipa*), a palm with immense fronds somewhat like the coconut, but not developing a stem. The mud-banks of the tidal estuaries are overgrown with mangrove (*byd*). Above the brackish water, the riparian tree is the willow (*mdmakd*), the tree that "denies its homage to the rain." For when by grace of heaven trees put forth their leaves, the willow sheds its own, and in the drought when all the rest are bare, the saucy tree breaks into leaf. Between the willow at the water's edge and the *twia* or the hill-slope, as the case may be, comes a narrow band of riparian forest with a frequent undergrowth of cane-brake. This is the habitat of several useful timber trees, *thingda*, *pyimma*,



253. UPPER WATERS OF RIVER (JULY).

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254. FOREST STREAM IN THE PINE REGION.

khayya, tinyá, No. 340), up to ten thousand feet, the greatest altitude of the Burma hills. The pine forest has an undergrowth of *saccharum*. When this burns, the fire runs up the resinous stems, and kills extensive areas of forest. The timber is good and attains great size, but is too unfavourably situated for transport. The forest types are not in all cases sharply defined, but merge into each other.

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The specific gravity of green teak is about 1.2, and of dry teak about 0.8. The best way to get it dry for floating is to ring or "girdle" the trees. The bark and shallow sap-wood are cut through with the axe; the leaves wither and the tree dies. In two or three seasons the timber is light enough to float, and meanwhile it is not exposed to the danger of being burned or overseen in the undergrowth as it might be if felled in order to season. The tree is eventually felled at the level of the girdle, but if buttressed or un-

other large endogenous plants. The shade is dense, so that grasses do not grow, but owing to the absence of forest fires, there is mould on the surface. The trees are of great height, commonly one hundred feet clear bole (No. 362), and often are of enormous girth. The natural rotation is short owing to early decay, and the bulk of the trees are slender. Above this "tropical" evergreen forest, as it is named by its explorer, Kurz, at the altitude of three to four thousand feet, according to latitude, comes a zone of stunted evergreen trees, among which oak species are conspicuous. Mulberry, raspberry, briar, and other shrubs of the temperate zone grow wild, and a decided change of climate is experienced. One to several thousand feet above this zone is the region of the pine (*pinus*



255. GIRDLING THE TREE.